PATENT APPLICATION
Q-67999

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Pascal AGIN, et al.

Appln. No.: 10/036,356 Group Art Unit: 2681

Confirmation No.: 5474 Examiner: Gelin, J.

Filed: January 07, 2002

For: A METHOD FOR IMPROVING PERFORMANCES OF A MOBILE RADIOCOMMUNICATION SYSTEM USING A POWER CONTROL ALGORITHM

SUBMISSION OF APPEAL BRIEF WITH FEE

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief. A check for the statutory fee of $500.00 is attached. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

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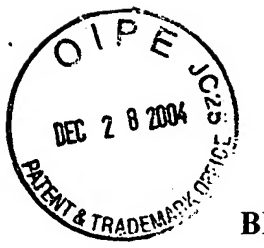
Date: December 28, 2004



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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

Table of Contents

I. REAL PARTY IN INTEREST

ALCATEL

Paris, France

II. RELATED APPEALS AND INTERFERENCES

NONE

III. STATUS OF CLAIMS

Claims 17-27, 29, 31, 32, 34, 37, 41 and 43-50 are finally rejected (see Office Action (Paper No. 5) mailed April 28, 2004), and are the subject of this appeal.

Dependent claims 28, 30, 33, 35, 36, 38-40 and 42 are only objected to, and would be allowable if rewritten in independent form.

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to final rejection.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The subject matter of the (only) independent claim 17 is described in Appellant's specification at page 2, line 25 to page 3, line 7, and at page 5, line 34, to page 7, line 14, and is illustrated in Figure 3 which illustrates an exemplary mobile station (MS) implementing the method of claim 17.

At step 14" the MS determines if a received power control command is an "up" power control command or a "down" power control command:

if the received power control command is an "up" power control command, at step 18 the MS determines if the transmssion rate has just changed:

if the transmission rate has not just changed, at step 19 the transmit power is increased by δ dB,

if the transmission rate has just changed , at step 20 the transmit power is increased by $[10 \log(SIR_2/SIR_1) + \delta]$ dB,

if the received power control command is a "down" power control command, at step 21 the MS determines if the transmssion rate has just changed:

if the transmission rate has not just changed, at step 22 the transmit power is decreased by δ dB,

if the transmission rate has just changed , at step 23 the transmit power is increased by $[10 \log(SIR_2/SIR_1) - \delta]$ dB,

This is periodically repeated, with a repetition period T, as illustrated by loop 24.

In this example, SIR_2/SIR_1 represents the corresponding change in the required transmission quality target value, corresponding to a change in the required transmsit power (in turn corresponding, for example, to a change in the transmission rate).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(1) The final rejection of claims 17-21, 23-27, 29, 31, 32, 34, 37, 41 and 43-50 under 35 U.S.C. § 102(b) as being anticipated by Tiedemann (U.S. 6,137,840).

(2) The final rejection of claim 22 (22/17) under 35 U.S.C. § 103(a) as being unpatentable (obvious) over Tiedemann '840 in view of Faber '052.

VII. ARGUMENT

The rejection under 35 U.S.C. § 102(b) requires that Tiedemann '840 describe, either expressly or inherently, each limitation of the rejected claims 17-21, 23-27, 29, 31, 32, 34, 37, 41 and 43-50, or in other words, that each of these rejected claims be readable on Tiedemann's disclosure.

Appellant respectfully submits that clearly such is **not** the case here, as further explained below.

Claim 17

Referring to Section 3 of the Final Office Action of April 28, 2004, Appellant **respectfully disagrees** with the Examiner, and especially the Examiner's analysis, that

> Tiedemann teaches...performing a step of changing the transmit power according to a corresponding change in the required transmission quality target value (i.e. transmitting at higher power or lower power due to propagation path, col.3, lines 27-38 and col.4 lines 1-28),

at least for the following reasons.

Notwithstanding the Examiner's assertion to the contrary, "transmitting at higher power or lower power due to propagation path" does **not** mean "changing the transmit power according to a corresponding change in the required transmission quality target value", as recited in

independent parent claim 17 and as understood by a person of ordinary skill in the art to which the claimed invention is directed.

In particular, "due to propagation path" is a **reason** for changing the transmit power, while Appellant's claimed "according to a corresponding change in the required transmission quality target value" is a **way** (method) of changing the transmit power.

It is the aim of any power control technique to transmit at higher or lower power, for various **reasons**. However, there are different possible **ways** (methods) of **changing** the transmit power, and the present invention has for its object one particular method which is **not disclosed or suggested** by Tiedemann, and which is a more efficient way (method) of changing the transmit power, i.e., "upon the occurrence of a significant change in the required transmit power".

As explained in Appellant's specification, the present invention aims at avoiding the drawbacks of the prior art, in particular for the case of a change in transmission rate (page 2, fourth paragraph), i.e. :

> However, in a system including a CLPC algorithm of the above-recalled type, it may take a relatively long time to reach the new required power each time there is a change in the transmission rate, for various reasons including in particular the time it takes for the outer loop to adjust the target SIR accordingly, or the fact that the transmit power is adjusted in a stepwise manner by the inner loop.

It is known to avoid such drawbacks by changing the transmit power in an inverse proportion to the spreading factor (i.e., in proportion to the variation of the transmission rate), as explained at page 2 of Appellant's specification:

> The CLPC algorithm may also be adapted, to make this time as short as possible. To this end, EP 0 886 389 teaches to change the transmit power in an inverse proportion to the variation of the spreading factor.

However, as recognized by the present invention, this known technique, in turn, has the drawback that it does not enable the new required power to be set to an optimized value.

To avoid such a drawback, Appellant's claimed invention requires the step of "changing the transmit power according to a corresponding change in the required transmission quality target value".

This step is **not disclosed or suggested** by Tiedemann.

Let us know look more particularly at the passages of Tiedemann cited by the Examiner:

The desired **results**, mentioned at col. 3, lines 27-38 of Tiedemann (i.e., "reducing the transmission power to the minimum necessary for high quality communications", or using the transmission power reduction of "one user [to allow] another user to transmit at a higher power"), are results which are already achieved by the **conventional** power control techniques as explained, for example, at Appellant's specification page 5, lines 13-23 together with Appellant's

Figure 1, and these are **not** the **results** aimed at by the present claimed invention, as explained above.

In col. 4, lines 1-18, Tiedemann discloses how to decrease the transmit power after having increased it by an amount which is "more than adequate". It is stated that ramping down of the transmit power either can "immediately begin", or can be refrained.

However, a ramping down (be it immediate or delayed) of the transmit power, after having increased it by the amount which is "more than adequate", is **not the same thing** as "changing the transmit power according to a corresponding change in the required transmission quality target value" and "upon the occurrence of a significant change in the required transmit power", as claimed in claim 17 and as understood by the person of ordinary skill in this art.

In particular, a "ramping down" of the transmit power (i.e., a decrease of the transmit power at an exponentially decreasing rate, as also explained at col. 3, line 61, of Tiedemann) produces a smooth change of the transmit power; however, if the power is changed according to Appellant's claimed "corresponding change in the required transmission quality target value", then the transmit power is (immediately) brought to the new required value.

Furthermore, the moment at which Tiedemann applies the "ramping down" does **not correspond** to Appellant's claimed "upon the occurrence of a significant change in the required transmit power".

Rather, it could be the preceding moment, at which Tiedemann increases the transmit power by an amount which is "more than adequate under most fading conditions" (as further described at col. 3, lines 55-62), that could correspond to the "upon the occurrence of a significant change in the required transmit power"; however, even in this case, Tiedemann does **not** disclose or suggest that this change should be according to Appellant's claimed "corresponding change in the required transmission quality target value". Tiedemann says **only** that it is a change that is "more than adequate under most fading conditions"; however, Tiedemann does **not** disclose which particular value of change should be applied, and, **most important**, Tiedemann does **not** disclose the particular value proposed by Appellant's claimed invention, i.e. "according to a corresponding change in the required transmission quality target value".

Col. 4, lines 19-28, of Tiedemann discloses setting "the power control bits to request additional power from the base station to accommodate a change in velocity [of the mobile station]". However, such a change, obtained by setting the power control bits to request additional power from the base station to accommodate a change in velocity of the mobile station, also is **not the same thing** as Appellant's claimed "change in the required transmission quality target value", as also understood by the ordinarily skilled person.

In particular, "setting the power control bits" means working according to the known power control techniques as explained, for example, at Appellant's specification page 5 together with Figure 1, and as reiterated above, upon the occurrence of a significant change in the

required transmit power, has known drawbacks which are avoided by the present claimed invention, i.e., by "changing the transmit power according to a corresponding change in the required transmission quality target value" (claim 17).

In summary, then, since Tiedemann does not disclose, either expressly or inherently, each limitation of claims 17-21, 23-27, 29, 31, 32, 34, 37, 41 and 43-50, or in other words, since none of these claims is readable on Tiedemann's disclosure (as explained in detail above), Appellant respectfully submits that Tiedemann is **incapable** of "anticipating" any of these claims, whereby Appellant respectfully requests the Board to **reverse** the final rejection of 35 U.S.C. § 102(b).

Claim 22

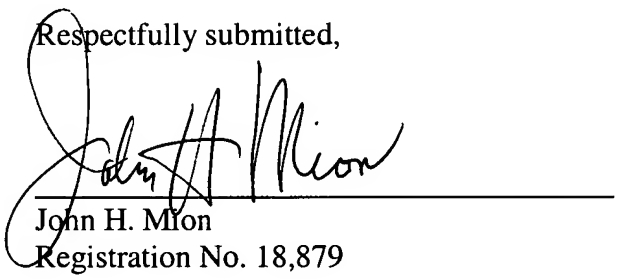
With respect to the rejection of dependent claim 22 (22/17) under 35 U.S.C. § 103(a), since Appellant has shown the error in the Examiner's statement that Tiedemann "teaches all of the limitations above except the transmission quality is represented by a signal to interference ratio", Appellant respectfully submits that to combine Faber's teaching with that of Tiedemann would not render the subject matter (taken as a whole) of claim 22 *prima facie* obvious. In fact, even if one (for some unknown reason) were to combine the teachings of Tiedemann and Faber, it is clear that there would not be produced the subject matter of dependent claim 22 (22/17) or subject matter which would have rendered claim 22 obvious. (Appellant acknowledges that "SIR (Signal-to-Interference Ratio)" is a known measure of "transmission quality"; see Appellant's specification at page 1, lines 21-26.)

This appealed application 10/036,356 is a continuation of Application No. 09/348,005, now issued U.S. Patent No. 6,337,973 whose issued claim 1 recites "bypassing of said power control algorithm", a recitation not found in the appealed claim 17.

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Date: December 28, 2004

CLAIMS APPENDIX

CLAIMS 17-27, 29, 31, 32, 34, 36, 37, 41, 43-50 ARE ON APPEAL:

17. A method for improving performances of a mobile radiocommunication system using a closed-loop power control algorithm, said method comprising, upon the occurrence of a significant change in the required transmit power, performing a step of changing the transmit power according to a corresponding change in the required transmission quality target value.

18. A method according to claim 17, wherein said step of changing the transmit power according to a corresponding change in the required transmission quality target value is performed in addition to the power control algorithm.

19. A method according to claim 17, wherein said significant change in the required transmit power includes a change in the transmission rate.

20. A method according to claim 17, wherein said corresponding change in the required transmission quality target value has a predetermined value.

21. A method according to claim 20, wherein said predetermined value is regularly updated.

22. A method according to claim 17, wherein said transmission quality is represented by a signal-to-interference ratio.

23. A method according to claim 17, wherein said mobile radiocommunication system is of CDMA type.

24. A method according to claim 17, wherein said power control is performed in the uplink transmission direction of said mobile radiocommunication system.

25. A method according to claim 17, wherein said power control is performed in the downlink transmission direction of said mobile radiocommunication system.

26. A mobile station comprising, for performing a method according to claim 24, means for performing one step of changing the transmit power according to a corresponding change in the required transmission quality target value, upon the occurrence of a significant change in the required transmit power.

27. A mobile station according to claim 26, comprising means for performing said step of changing the transmit power according to a corresponding change in the required transmission quality target value, in addition to a step of changing the transmit power according to the power control step of the power control algorithm.

29. A mobile radiocommunication network entity comprising, for performing a method according to claim 24, means for correspondingly changing the required transmission quality target value, upon the occurrence of a significant change in the required transmit power.

31. A mobile radiocommunication network entity comprising, for performing a method according to claim 25, means for performing one step of changing the transmit power according to a corresponding change in the required transmission quality target value, upon the occurrence of a significant change in the required transmit power.

32. A mobile radiocommunication network entity according to claim 31, comprising means for performing said step of changing the transmit power according to a corresponding change in the required transmission quality target value, in addition to a step of changing the transmit power according to the power control step of the power control algorithm.

34. A mobile station comprising, for performing a method according to claim 24, means for correspondingly changing the required transmission quality target value, upon the occurrence of a significant change in the required transmit power.

36. A mobile station according to claim 28, comprising means for receiving values to be stored in said look-up table, said values being communicated by the network.

37. A mobile radiocommunication network entity comprising, for performing a method according to claim 24, means for communicating said corresponding change in the required transmission quality target value, to mobile stations.

41. A mobile station comprising, for performing a method according to claim 25, means for communicating said corresponding change in the required transmission quality target value, to a mobile radiocommunication network entity .

43. A mobile station according to claim 41, further including means for regularly updating said communicated values, on the basis of a quality estimation carried out at the mobile station side.

44. A mobile radiocommunication system, including at least one mobile station according to claim 26.

45. A mobile radiocommunication system, including at least one mobile station according to claim 34.

46. A mobile radiocommunication system, including at least one mobile station according claim 41.

47. A mobile radiocommunication system, including at least one mobile radiocommunication network entity according claim 29.

48. A mobile radiocommunication system, including at least one mobile radiocommunication network entity according to claim 31.

49. A mobile radiocommunication system, including at least one mobile radiocommunication network entity according to claim 37.

50. A method according to claim 17, wherein said step of changing the transmit power according to a corresponding change in the required transmission quality target value is performed in addition to a step of changing the transmit power according to the power control step of the power control algorithm.